REMARKS

This paper responds to the Office Action mailed on May 18, 2005, a Petition for a Time Extension is filed herewith.

Claim 27 is amended, no claims are canceled, and claims 44-52 are added; as a result, claims 27, 33, 36-38, and 44-52 are pending in this application.

The amendments to the claims are fully supported by the specification as originally filed. No new matter is introduced. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Reservation of the Right to Swear Behind References

Applicant maintains the right to swear behind any references which are cited in a rejection under 35 U.S.C. 102(a), 102(e), 103/102(a), and 103/102(e). Statements distinguishing the claimed subject matter over the cited references are not to be interpreted as admissions that the references are prior art.

§103 Rejection of the Claims

Claims 27, 33 and 36-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yao et al. (U.S. 6,133,613) in view of Applicant's admitted prior art as taught in instant figures 1-3. Applicant respectfully traverses based a lack of a *prima facia* case of obviousness.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Claim 27 recites, in part, "an annealed metal silicide layer on the polysilicon layer; a layer comprising $Si_xN_yO_z$:H formed over and in physical contact with the metal silicide." Applicant can not find these features in Yao or the asserted admitted prior art, either alone or in combination. Specifically, Yao does not call for an annealed metal silicide layer. Accordingly, Applicant requests that the present rejection be withdrawn and claim 27, along with dependent claims 33 and 36-38 be allowed.

The Office Action at page 3 states "Finally, the limitation in claim 27 that the silicide is annealed after the formation of the antireflective layer is merely a product by process limitation." Applicant traverses this assertion. The recitation in claim 27 of "the annealed metal silicide being the product of a process in which the metal silicide is subjected to an anneal treatment after the layer comprising $Si_xN_yO_z$:H is formed" is not merely a product by process limitation and is a functional limitation that deserves consideration and patentable weight. Applicant respectfully points out that functional language is specifically authorized by *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971); *In re Caldwell*, 138 USPQ 243 (CCPA 1963); *Lewmar Marine, Inc. v. Barient, Inc.*, 827 F.2d 744, 3 USPQ2d 1766 (Fed. Cir. 1987).

Applicant amends claim 27 to clarify the "annealed" limitation. Specifically, claim 27 now recites "an *annealed* metal silicide layer on the polysilicon layer" (italics added). It is merely a matter of grammatical construction that the term "annealed" is an adjective to the limitation "metal silicide layer." By definition, an adjective is a modifier that describes a quality or property of the phrase to which the adjective refers. Accordingly, "annealed" describes a physical or structure feature of the metal silicide layer. As such the term "annealed" can not be discounted as a product by process limitation. Moreover, the limitation of "the annealed metal silicide being the product of a process in which the metal silicide is subjected to an anneal treatment after the layer comprising $Si_xN_yO_z$:H is formed" further describes a quality of the annealed metal silicide layer.

Applicant further asserts that the term "annealed" describes a physical feature of the metal silicide layer as an anneal would not be used unless it provides some beneficial change to the properties of an IC layer. An anneal is a high-temperature operation that can achieve various goals. However, each anneal uses a portion of the thermal budget of each substrate or wafer. The thermal budget is the amount of thermal exposure (temperature multiplied by time) for a substrate or wafer during processing. Exceeding the limited thermal budget may result in defects in the substrate. Accordingly, an anneal is not used unless it provides an operational or structural improvement over an un-annealed layer.

The Office Action at page 4 states that

> The final product made obvious by Yao et al. and applicant's prior art as well as the final product instantly claimed, both contain an antireflective layer over, and in direct contact with, a silicide layer. The process of the instant claims has not been shown to provide a structure which is materially different from that made obvious by Yao et al. in view of applicant's prior art.

Applicant disagrees with this position. The annealed metal silicide as recited in present claim 27 includes structure that is different than that of Yao et al. For example, the annealed metal silicide may have improved crystallinity and conductivity relative to an un-annealed layer. This is the basic reason such layers are annealed. As stated above, an anneal will be avoided unless necessary due to thermal budgets. Accordingly, the limitation of an "annealed metal silicide layer" as recited in claim 27 is structural different than the structure of Yao et al. and the asserted applicant's prior art does not cure this deficiency of Yao et al. Applicant requests allowance of claim 27 and its dependent claims.

Even if the limitation of "metal silicide being the product of a process in which the metal silicide is subjected to an anneal treatment after the layer comprising $Si_xN_yO_z$:H is formed" was a "product-by-process" limitation, which the Applicant does not concede, the claims remain allowable over the applied art of Yao and the asserted applicant's admitted prior art. Applicant notes that "[t]he structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product." MANUAL OF PATENT EXAMINING PROCEDURE, 8th Ed., Rev. 3, §2113 (August 2005). Applicant asserts that the structure resulting from the process should be considered and is patentable distinct over the applied art. Moreover, the process imparts distinctive structural features not found in the applied art. Accordingly, claims 27, 33, and 36-38 are believed to be in condition for allowance.

More specifically, The M.P.E.P., chapter 2113, states:

> "The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the

> manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., In re Garnero, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in place," "press fitted," and "**etched**" are capable of construction as **structural** limitations [Emphasis added].)"

Thus, Applicant submits that, in claims 27, 33, and 36-38, the "annealed" layer is a **structural** limitation, as stated in the portion of the M.P.E.P above. Applicant is unable to find in the cited art, either individual or in combination, a metal silicide layer being "annealed" and in physical contact with the a layer comprising $Si_xN_yO_z$:H, as well as including the other features recited in the claims.

Claim 27, as amended, now recites, among other things, that "the layer comprising $Si_xN_yO_z$:H protects the annealed metal silicide layer during the anneal." Applicant is unable to find an annealed metal silicide in Yao. The asserted applicant's admitted prior art teaches away from this feature by its teaching an oxide layer 22 on the metal silicide prior to anneal for the protection of the metal silicide layer during the anneal. Accordingly, neither of the asserted prior arts teach or even suggest this feature or meets the requirements for a *prima facia* case of obviousness.

The Office Action at page 2 states " Yao et al. also teach that a photoresist layer 516a is formed on the layers such that the layers may be etched to form a stack (col. 4, lines 37-43)." Applicant respectfully traverses this statement. Yao et al. states at col. 4, lines 37-43

> A photoresist layer 516 is then formed on the LPTEOS or SiN layer 510. After formation, the photoresist layer is then patterned using conventional photolithographic techniques and this results in the formation of the integrated circuit pattern 516a. Integrated circuit pattern 516a is preferably formed using electromagnetic radiation having an exposure wavelength of less than 440 nanometers.

This passage merely describes patterning the photoresist and not etching the layers to form a stack as asserted in the Office Action. Reconsideration and withdrawal of this statement with regard to this passage in Yao et al. are requested.

The Office Action makes numerous assertions that features a "well known in the art",

e.g., a gate oxide layer and a MOSFET gate stack, applicant traverses these assertions as a form of official notice. Applicant respectfully traverses this official notice and requests the Examiner to provide a reference that describes such an element. Absent a reference, it appears that the Examiner is using personal knowledge, so the Examiner is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

Based at least on the above, Applicant submits that claims 27, 33, and 36-38 are allowable over the applied art. Reconsideration and allowance are requested.

Prior Responses

Applicant hereby incorporates all prior responses by reference to preserve all issues for appeal.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 349-9587 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

PAUL A. FARRAR

By his Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 349-9587

Date 18 Nov '05

By _____
Timothy B Clise
Reg. No. 40,957

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 18 day of November, 2005.

KATE GANNON _____

Name Signature